
Sustainable Installations Regional Resource Assessment (SIRRA)

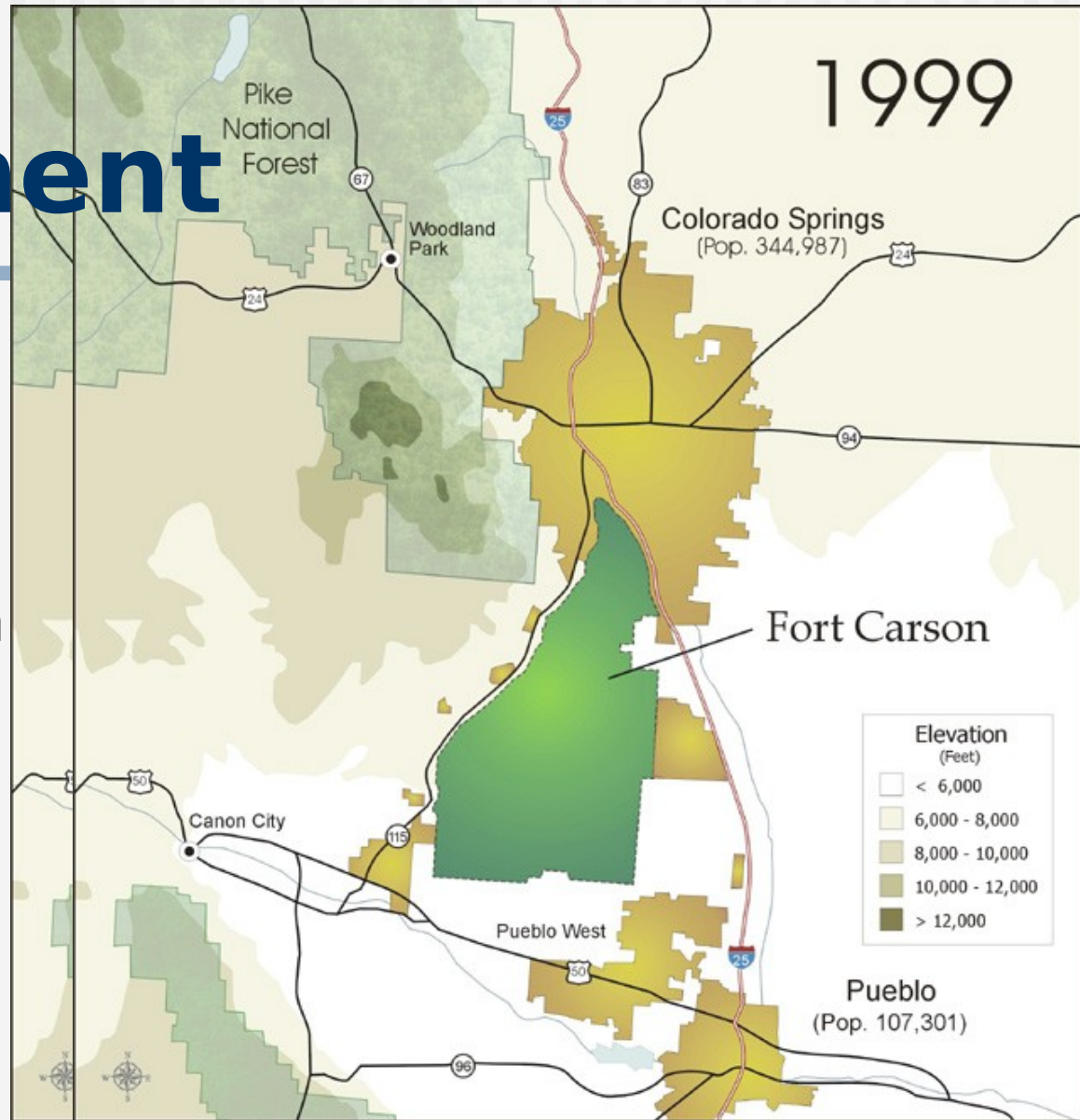
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Pressures on Ranges and Training Lands



Encroachment

“Any outside activity law or pressure that affects the ability of military forces to train to doctrinal standards or to perform the mission assigned to the installation.”

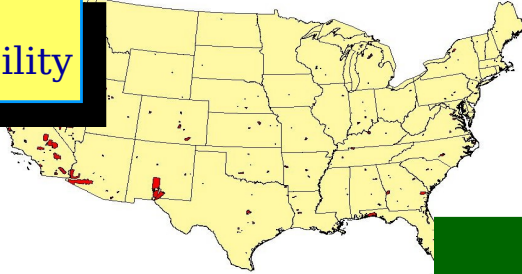


Urban Growth at Fort Carson,₃ Colorado

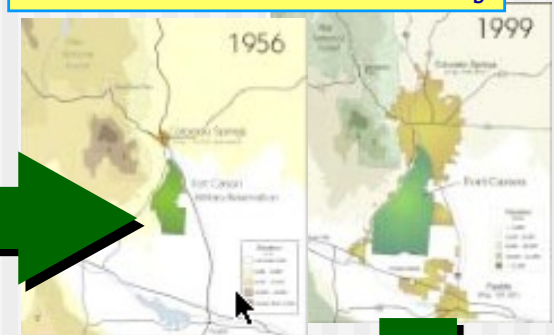
Technologies for Planning Across Installation Fence

SIRRA is a national database for regional sustainability assessment

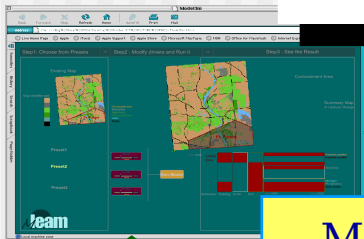
Assess Sustainability



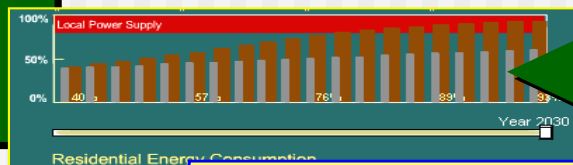
Conduct Trend Analyses



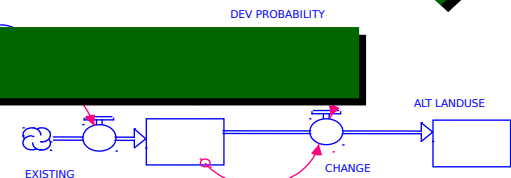
Mitigate Problems



Project Future Changes



Quantify Mission Impacts



Objective for SIRRA

To provide an easily accessible framework for collection, comparison and analysis of regional information relevant to installation sustainability.

SIRRA is one of several technologies being developed by ERDC to provide access to data, analysis and expertise for across

SIRRA . . .

- Is a process of characterizing installations based on a set of risks or stressors.
- Uses existing science and measurement-based national data sources.
- Develops sustainability ratings for each indicator.
- Develops a GIS display of data.
- Incorporates findings within a web-based analysis tool.
- Is being tested by service POCs and subject matter experts through a virtual review process.

SIRRA's Sustainability Issues

- Air
- Energy
- Urban Development
- Threatened and Endangered Species
- Locational
- Water
- Economic
- Quality of Life
- Infrastructure
- Security

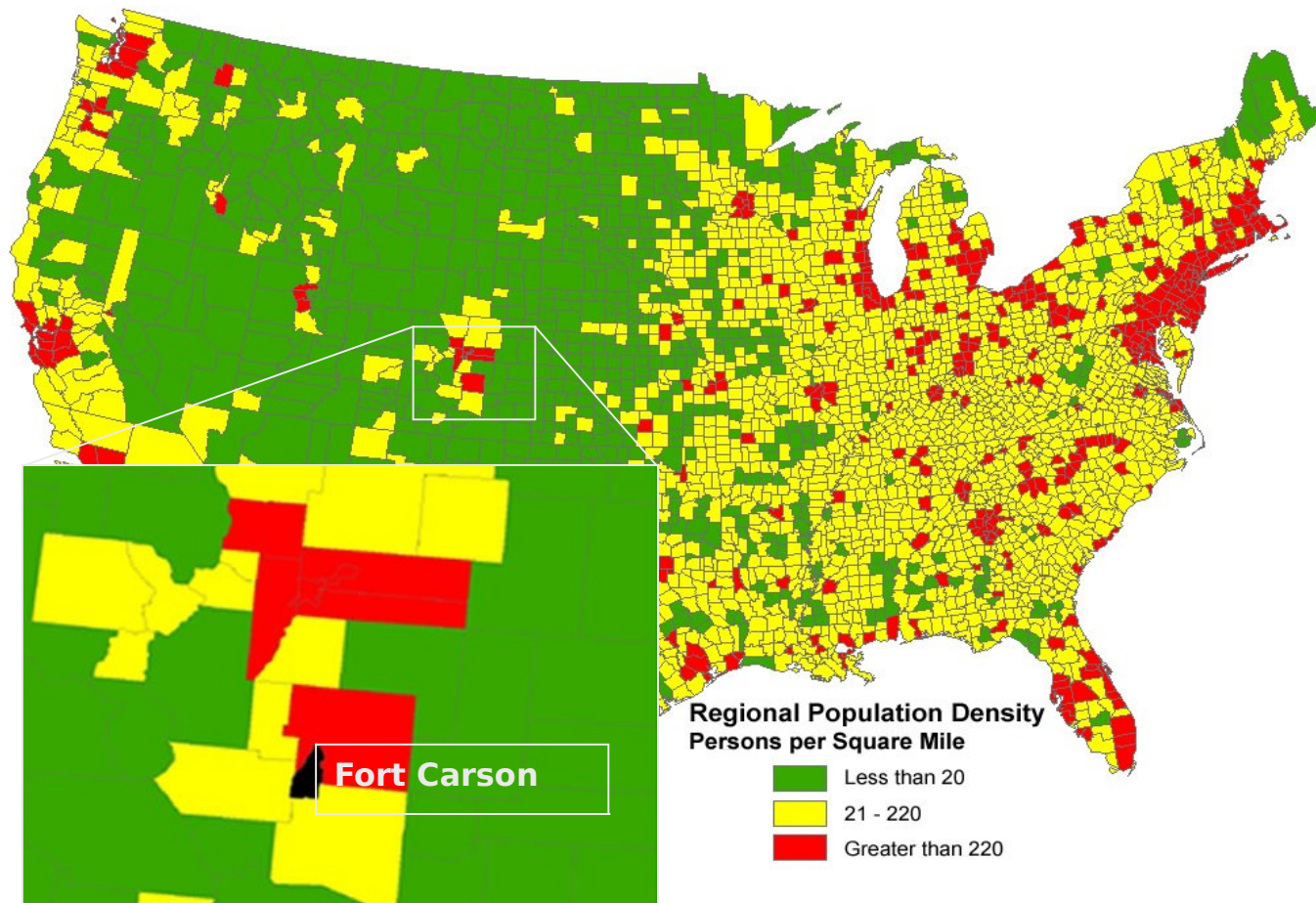
Data Sources for SIRRA

- National Data Sets
 - DOE, EPA, Census Bureau, FAA
 - State, county and watershed resolution
- Proven Sources
- Updated at Regular Intervals
 - QOL, Economic – ten years
 - Energy, Transportation, Watershed, TES – annual
- Automated Update is Optimal
 - Cooperative agreements for updates being developed with data collection agencies

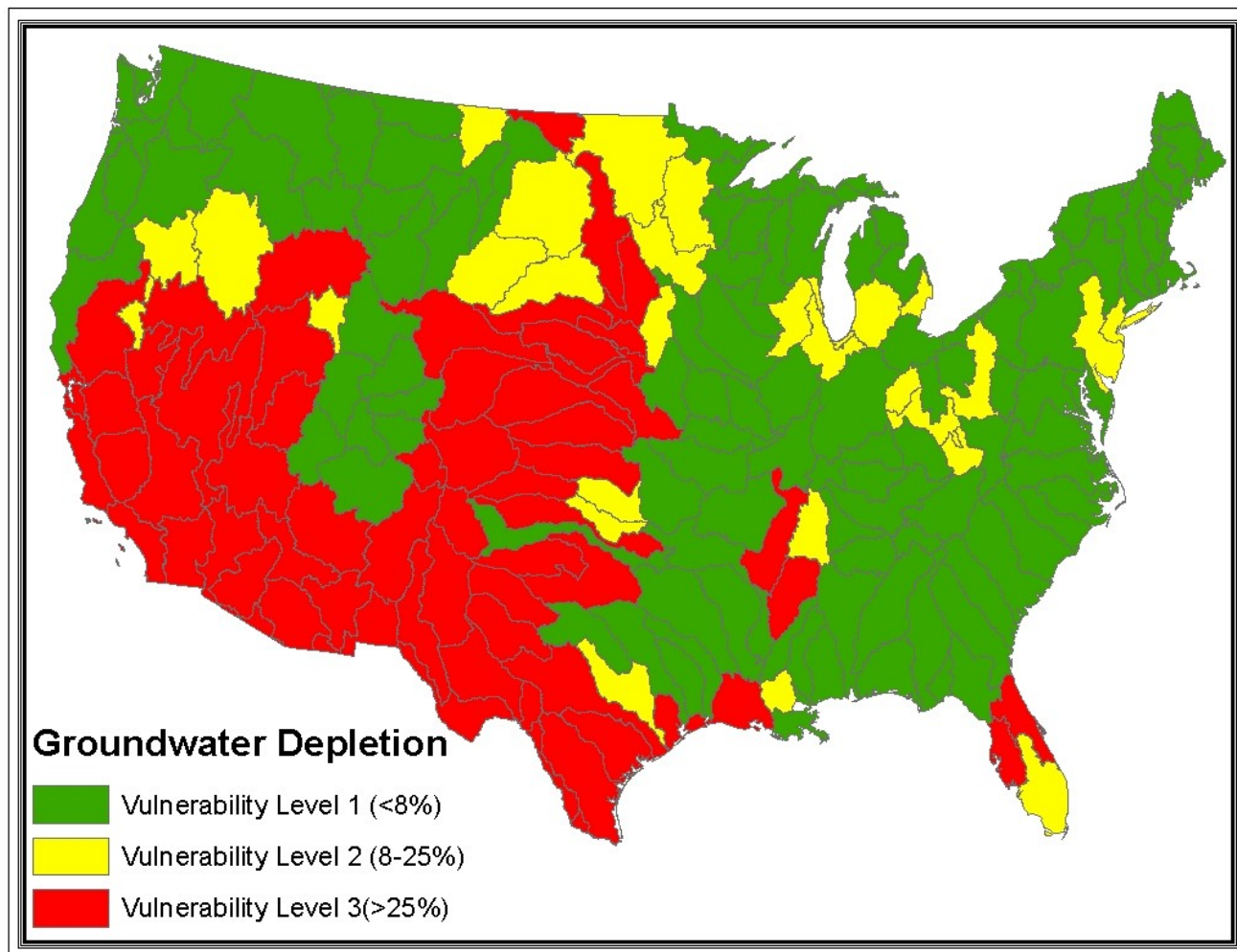
Sustainability Ratings

- National Regulatory Targets
 - EPA: criteria air pollutants & index of water indicators
- Existing Agency
 - FEMA: designated seismic zones
 - USGS: 100 year flood plain
- Calculated
 - Quality of Life: national averages
 - Economic: literature review
- Expert Opinion
 - Electrical Deregulation
 - State Smart Growth Plans

GIS Display of Data



GIS Display of Data



Web-Based Analysis Tool

Fort Future - SIRRA Matrix - Microsoft Internet Explorer

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Address <http://schubert.cecer.army.mil:8080/ff/sirra.do> Go Links »

FORT FUTURE

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Topics

- [Home](#)
- [Resources](#)

SIRRA

- [SIRRA Home](#)
- [SIRRA Review](#)
- [SIRRA Map](#)
- [SIRRA Help](#)
- [SIRRA Database](#)

SIRRA

Sustainable Installations Regional Resource Assessment

Welcome . . .

Welcome to the Sustainable Installations Regional Resource Assessment (SIRRA). SIRRA provides a simplified national assessment of sustainability based on ten themes: air, energy, urban development, threatened and endangered species, location, water, economy, quality of life, infrastructure, and security. The SIRRA methodology provides resource assessment ratings for forty-eight individual regional indicators. SIRRA relies on existing national data sets primarily from federal or other national organizations that manage or collect the data. Statistical analyses were completed for each indicator, where required, to assign sustainability thresholds and ratings. The data was then mapped into GIS coverages for individual indicators coded as red, amber, or green. Military installations are placed geographically in a location and the GIS data is applied to each one, individually.

Collectively, indicators can aid in identifying potential issues that should be considered when stationing, base realignment, and mission sustainment decisions are made. Some limitations of this study do necessitate caution in the use and application of the results. The set of indicators are based on the expert judgments and consensus of the project team and were somewhat restricted by the available data. The identification of specific risk thresholds and classifications is subjective in some cases, and alternative classifications are possible. The goal of the database is to provide useful insight into identifying relative ratings for resource

Internet



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SIRRA - Sustainable Installations Regional Resource Assessment

Topics
[Home](#)
[Resources](#)

SIRRA
[SIRRA Home](#)
[SIRRA Review](#)
[SIRRA Map](#)
[SIRRA Help](#)
[SIRRA Database](#)

Select a service branch:
☐ Army
☐ Coast Guard
☐ Air Force
☐ National Guard
☐ Navy
☐ DLA
☐ Marines
☐ All Branches

OR - Select an individual installation:

Select one or more sustainability issues:
☐ Air Sustainability
☒ Water Sustainability
☐ Energy Sustainability
☐ Economic Sustainability
☐ Urban Development
☐ QOL Sustainability
☐ TES
☐ Infrastructure Sustainability
☐ Locational Sustainability
☐ Security Sustainability
☐ All Indicators

Display red-yellow-green colors for indicator thresholds:
☒ Set by data source (default) ☐ Set by SIRRA ☐ Set by either data source or SIRRA ☐ None

Legend

good	color not applied
acceptable	data not available
poor	47.2 = weighted data

Selected service branch: All Branches (383 installations)									
Installation by State		Indicators							
		Air Sustainability		Energy Sustainability					
Installation	State	Criteria Pollutant Non-Attainment (num)	Noise Complaints (num. complaints)	Electrical Source (% non-coal fossil)	NAG Price Variability (% of US avg. NAG)	Petroleum Price Variability (% of US avg.)	NAG Imports (% Dependence)	Petroleum Imports (% Dependence)	Electrical Price Structure

SIRRA - Sustainable Installations Regional Resource Assessment

[Home](#)
[Resources](#)

SIRRA

[SIRRA Home](#)
[SIRRA Review](#)
[SIRRA Map](#)
[SIRRA Help](#)
[SIRRA Database](#)

Select a service branch:

- ☐ Army ☐ Air Force ☐ Navy ☐ Marines
☐ Coast Guard ☐ National Guard ☐ DLA ☐ All Branches

OR - Select an individual installation:

Fort Carson

Select one or more sustainability issues:

- ☐ Air Sustainability ☐ Energy Sustainability ☐ Urban Development ☐ TES ☐ Locational Sustainability
☒ Water Sustainability ☐ Economic Sustainability ☐ QOL Sustainability ☐ Infrastructure Sustainability ☐ Security Sustainability ☐ All Indicators

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Submit Query

Selected installation: Fort Carson

Installation by State		Indicators					
		Water Sustainability					
Installation	State	Level of Development (%)	Groundwater Depletion (%)	Flood Risk (num. of people)	Low Flow Sensitivity (cfs/sq. mile)	Species at Risk (number)	Water Quality
Fort Carson (Army)	Colorado	High	High	Average	High	1	1

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Selected service branch: Marines (17 installations)

Installation by State		Indicators					
		Water Sustainability					
Installation	State	Level of Development (%)	Groundwater Depletion (%)	Flood Risk (num. of people)	Low Flow Sensitivity (cfs/sq. mile)	Species at Risk (number)	Water Quality
Marine Corps Air Station Yuma (Marine Corps)	Arizona	High	High	Low	High	-	-
Marine Corps Air Station El Toro (Marine Corps)	California	High	High	High	High	1	5
Marine Corps Air Station Tustin (Marine Corps)	California	High	High	High	High	1	5
Marine Corps Base, Camp Pendleton (Marine Corps)	California	High	High	High	High	2	1
Marine Corps Logistics Base Barstow (Marine Corps)	California	High	High	Average	High	1	3
Marine Corps Recruiting, San Diego (Marine Corps)	California	High	High	High	High	2	4
MCAGCC Twenty Nine Palms (Marine Corps)	California	Low	High	Average	High	1	3
Marine Corps Logistics Base Albany (Marine Corps)	Georgia	Low	Low	High	Low	1	3
MCAS Kaneohe Bay (Marine Corps)	Hawaii	-	-	-	-	-	-
Kansas City Marine Corps Complex (Marine Corps)	Missouri	Average	Low	Average	Average	1	4
Marine Corps Base, Camp Lejeune (Marine Corps)	North Carolina	Average	Low	Average	Low	2	2
MCAS, Cherry Point (Marine Corps)	North Carolina	Low	Low	High	Average	2	3
MCAS Beaufort (Marine Corps)	South Carolina	Average	Low	High	Low	1	3
MCRD, Parris Island (Marine Corps)	South Carolina	Average	Low	High	Low	1	3

Metadata

Documentation

- Issue: water
- Indicator: water quality index
- Variable: 17 data points
- Scale: watershed
- Year: 1999
- Data Source: EPA IWI
- Logic

Metadata (contd)

- Replicable: every 2 to 4 years
- Directions: acquire/process data
- Indicator Measure: WQ ratings
- Rules: for multiple watersheds
- Map
- Frequency Distribution



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Topics

[Home](#)

[Resources](#)

SIRRA

[SIRRA Home](#)

[SIRRA Review](#)

[SIRRA Map](#)

[SIRRA Help](#)

[SIRRA](#)

[Database](#)

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Select a service branch or individual installation for display:

- Fort Bragg
- Fort Buchanan
- Fort Campbell
- Fort Carson**
- Fort Chaffee
- Fort Detrick
- Fort Devens
- Fort Dix

Select a sustainability indicator:

- Petroleum Imports
- Elec. price struct.
- Regional pop. dens.
- Incr. req. growth rate**
- Regional pop. growth
- Regional land urb.
- State Smart Growth Plan
- Joint Landuse Study

Refresh Map

☒ Zoom In
 ☐ Zoom Out
 ☐ Pan
 ☐ Full Extent
 ☐ Identify Installation
 ☐ BufTest

☐ Counties
 ☐ Large Wsheds
 ☐ Small Wsheds
 ☐ States
 ☐ Indicator Renderer Test

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Topics

[Home](#)

[Resources](#)

SIRRA

[SIRRA Home](#)

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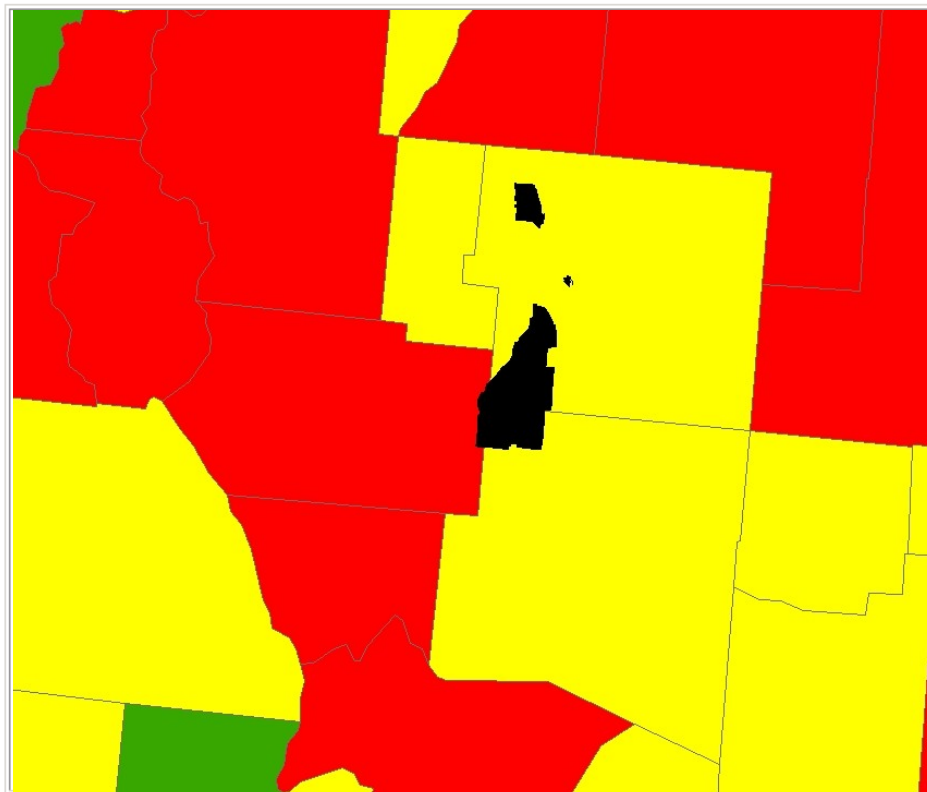
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[SIRRA Help](#)

[SIRRA](#)

[Database](#)

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Topics

[Home](#)

[Resources](#)

SIRRA

[SIRRA Home](#)

[SIRRA Review](#)

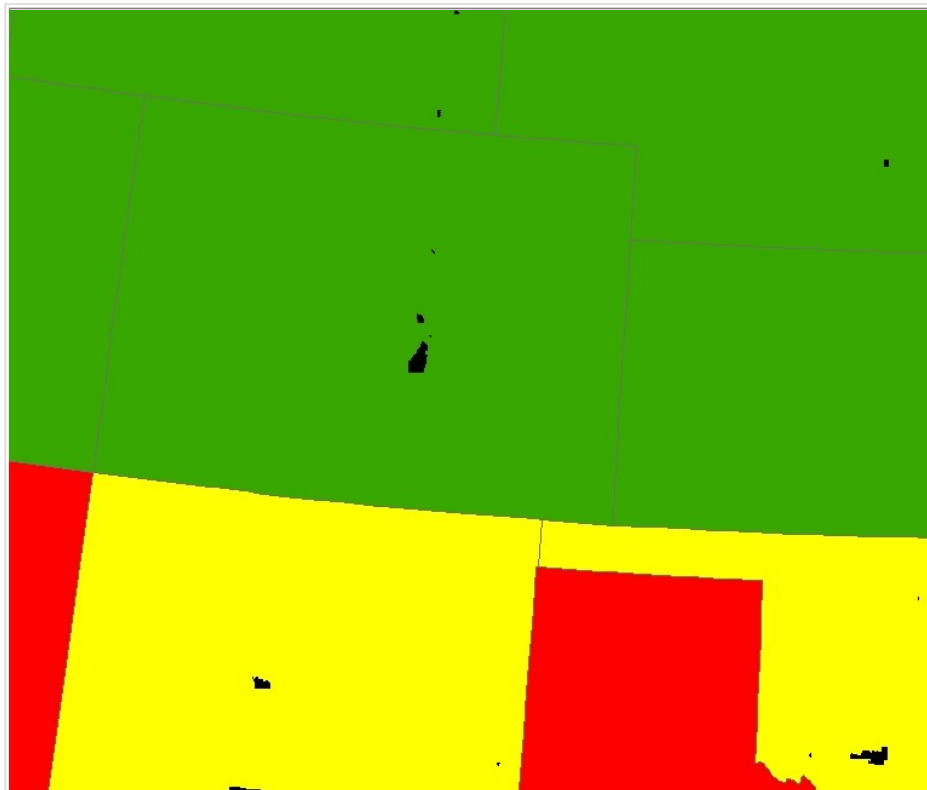
[SIRRA Map](#)

[SIRRA Help](#)

[SIRRA](#)

[Database](#)

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Petroleum price var.
NAG Imports
Petroleum Imports
Elec. price struct.
Regional pop. dens.
Incr. reg. growth rate
Regional pop. growth
Regional land urb.

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Potential Applications

- Installation & Communities Sustainability Planning
 - Sustainability charettes
- Regional Planning
 - Multi-Service training opportunities
- Stationing and Force Alignment Changes
- Stationing Changes
- Service, cross-service and regional mission vulnerability assessments

Current Status

- Virtual Review of SIRRA
 - 12-23 January
 - Methodology and user interface
- Planned Enhancements
 - Sliding thresholds
 - Report functions
 - Additional data sources

Where is SIRRA?

- SIRRA is integrated into the Fort Future website
- Fort Future is a new environment to address military installation planning challenges
- SIRRA provides a national and regional look at some of the planning challenges (such as resource constraints, population growth, airspace limits) facing our installations.

Accessing SIRRA

- Fort Future Website (password required)
<http://schubert.cecer.army.mil:8080/ff/home.do>
- Access is one issue for reviewers (e.g. public or close-held)
- All data from publicly available sources

For More Information

- Sustainability, Encroachment and Room to Maneuver (SERM) website
<http://www.cecercer.army.mil/KD/SERM>
- Information on all planning across the fence line data and tools from Engineer Research and Development Center